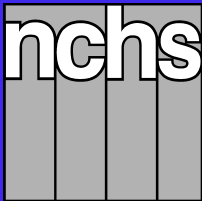


# Obesity and Overweight in the US

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# Overview

- Data
- Definitions
- Trends
- Race/ethnic variation
- Income variation among children

# Data source

The National Health and Nutrition  
Examination Surveys (NHANES)

# NHANES

- Conducted by NCHS/CDC
- Series of cross-sectional nationally representative examination surveys of civilian, non-institutionalized population
- Stratified multistage probability samples

# NHANES, 1999-2000

- 1999 became continuous (5000 sp/year)
- 2 years for adequate sample sizes
- Over-sampled non-Hispanic blacks, Mexican Americans and adolescents

National Health and Nutrition  
Examination Survey



...monitoring  
the  
nation's  
health

Visit our website  
[www.cdc.gov/nchs/nhanes.htm](http://www.cdc.gov/nchs/nhanes.htm)

# Defining Obesity and Overweight

# Obesity v overweight

- Obesity: excess adipose tissue
  - Often impractical to measure
- Overweight: excess weight for height
  - Easy to obtain
  - A proxy for adiposity, highly correlated
  - Various indices

# Body mass index (BMI)

- Weight/height<sup>2</sup> (kg/m<sup>2</sup>)
- Widely used in adults to define obesity
  - Criteria for excess related to health risk determined from different studies
  - Convenient round numbers (25 and 30)
- Recommended in childhood

# Using BMI to define childhood overweight

- BMI varies with age and sex
- Unclear what risk-related criteria to use
  - Long span before adverse outcomes
  - Small samples on cardiovascular risks in youth
  - Predictive value varies with heaviness & age
- Statistical definition based on percentiles in a reference population commonly used

# Definitions

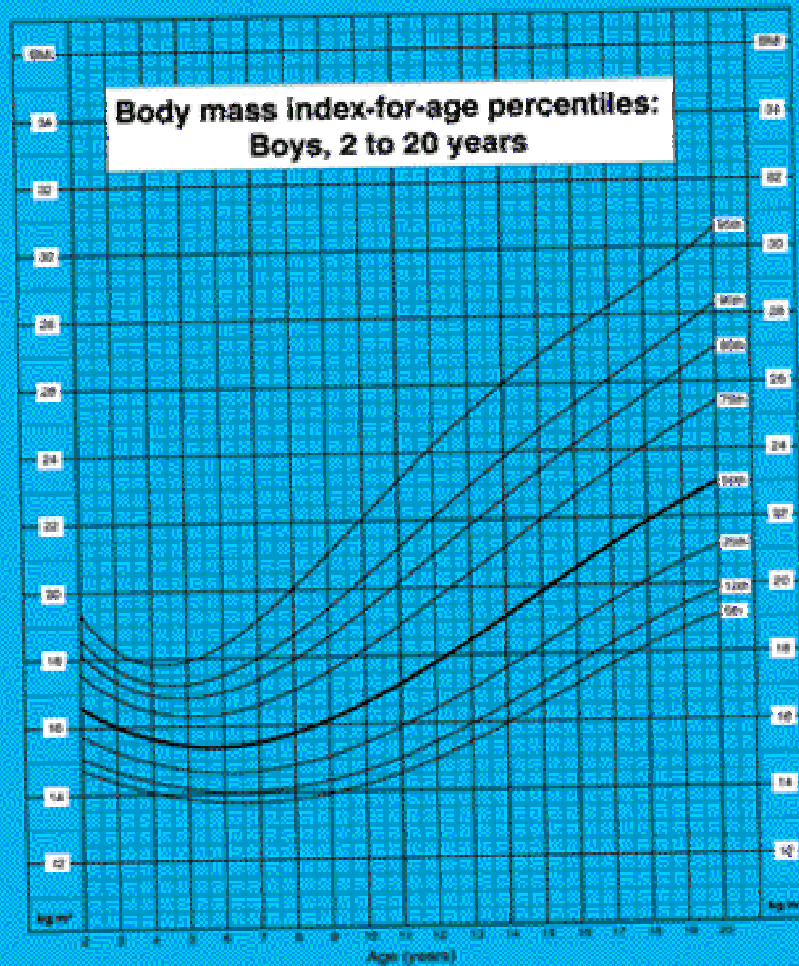
- Adults
  - Overweight  $25 \leq \text{BMI} < 30$
  - Obese  $30 \leq \text{BMI} < 40$
  - Extremely obese  $\text{BMI} \geq 40$

# Definitions

- Children
  - 2000 CDC growth charts
  - 2-19 years;
    - **Overweight: BMI-for-age  $\geq$  95th percentile**
    - **At risk for overweight:**  
**85th percentile  $\leq$  BMI-for-age  $<$  95th percentile**
  - Birth-2 years
    - **weight-for-length  $\geq$  95th percentile**

# CDC Growth Charts: United States

Body mass index-for-age percentiles:  
Boys, 2 to 20 years

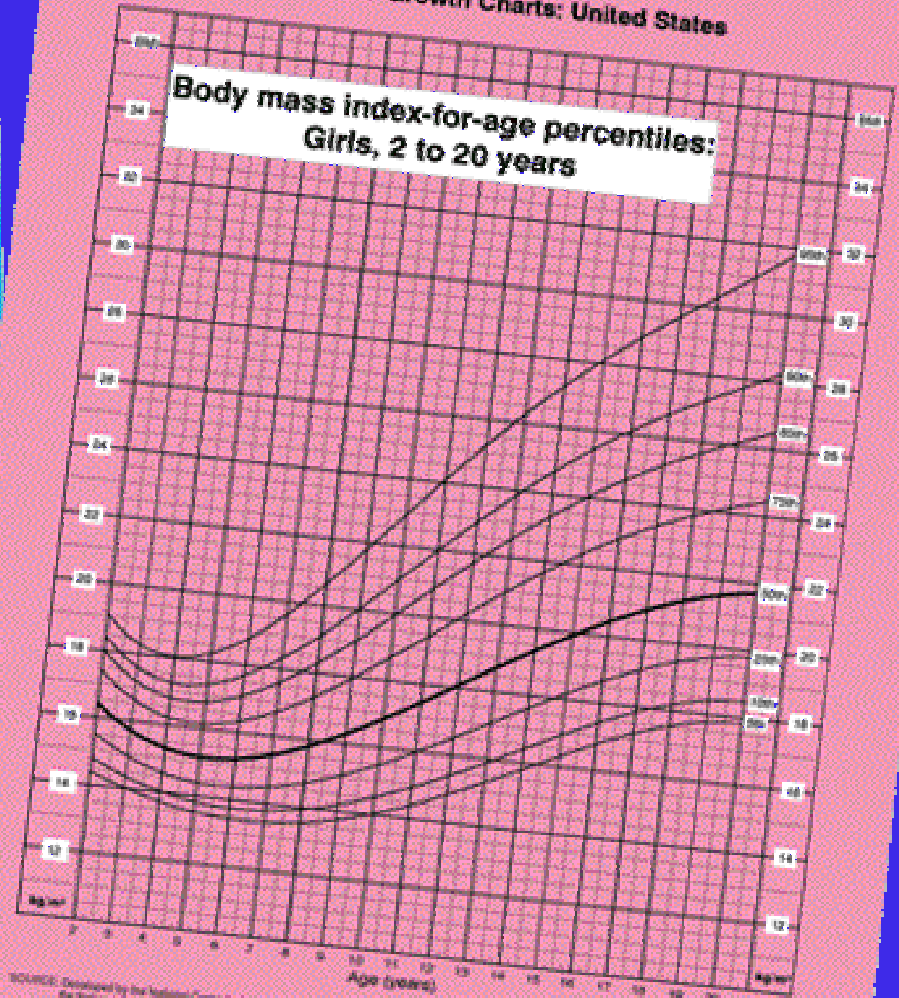


SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).



# CDC Growth Charts: United States

Body mass index-for-age percentiles:  
Girls, 2 to 20 years



SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

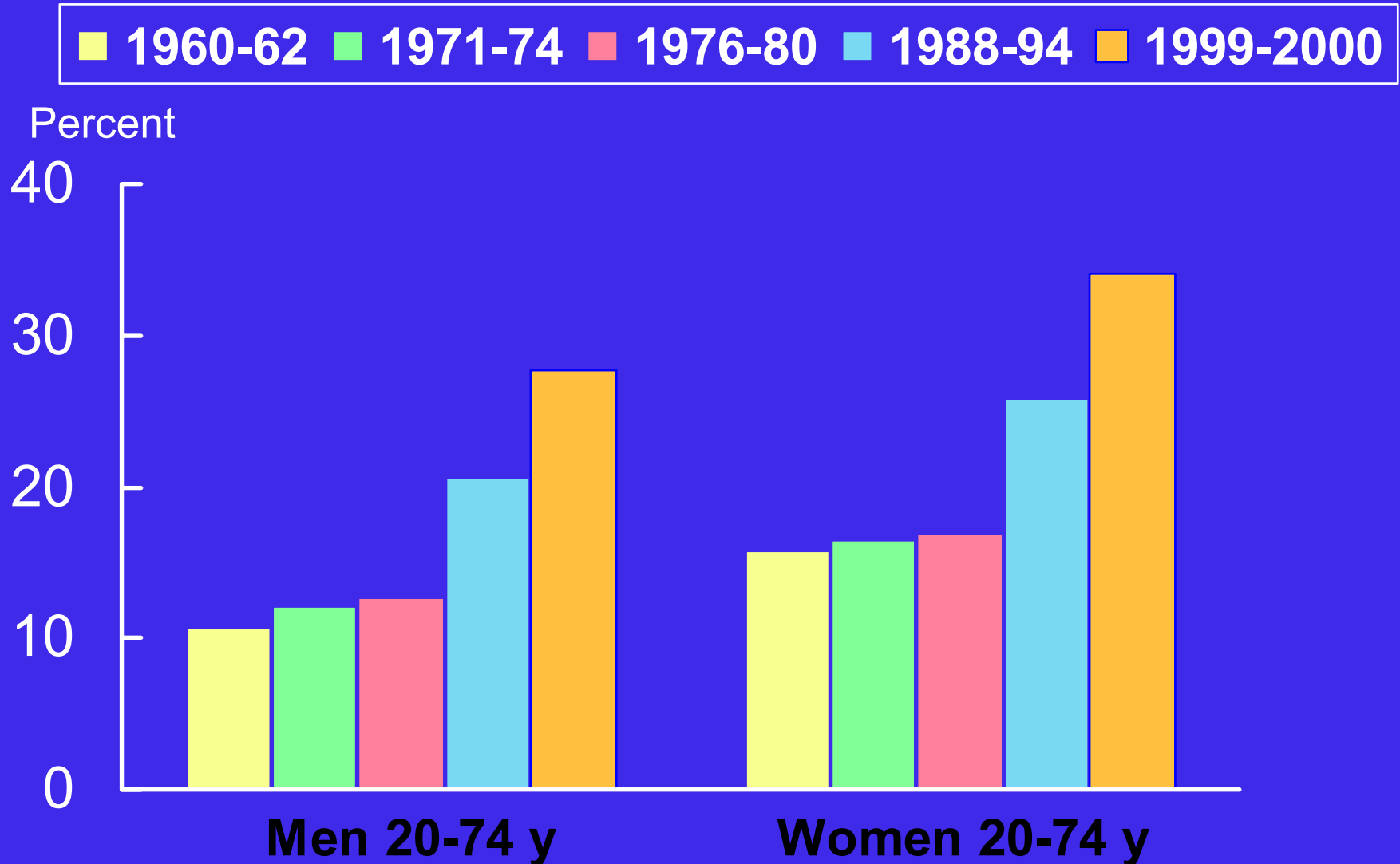


# **Obesity and overweight in the United States**

# Obesity & overweight, 1999-2000

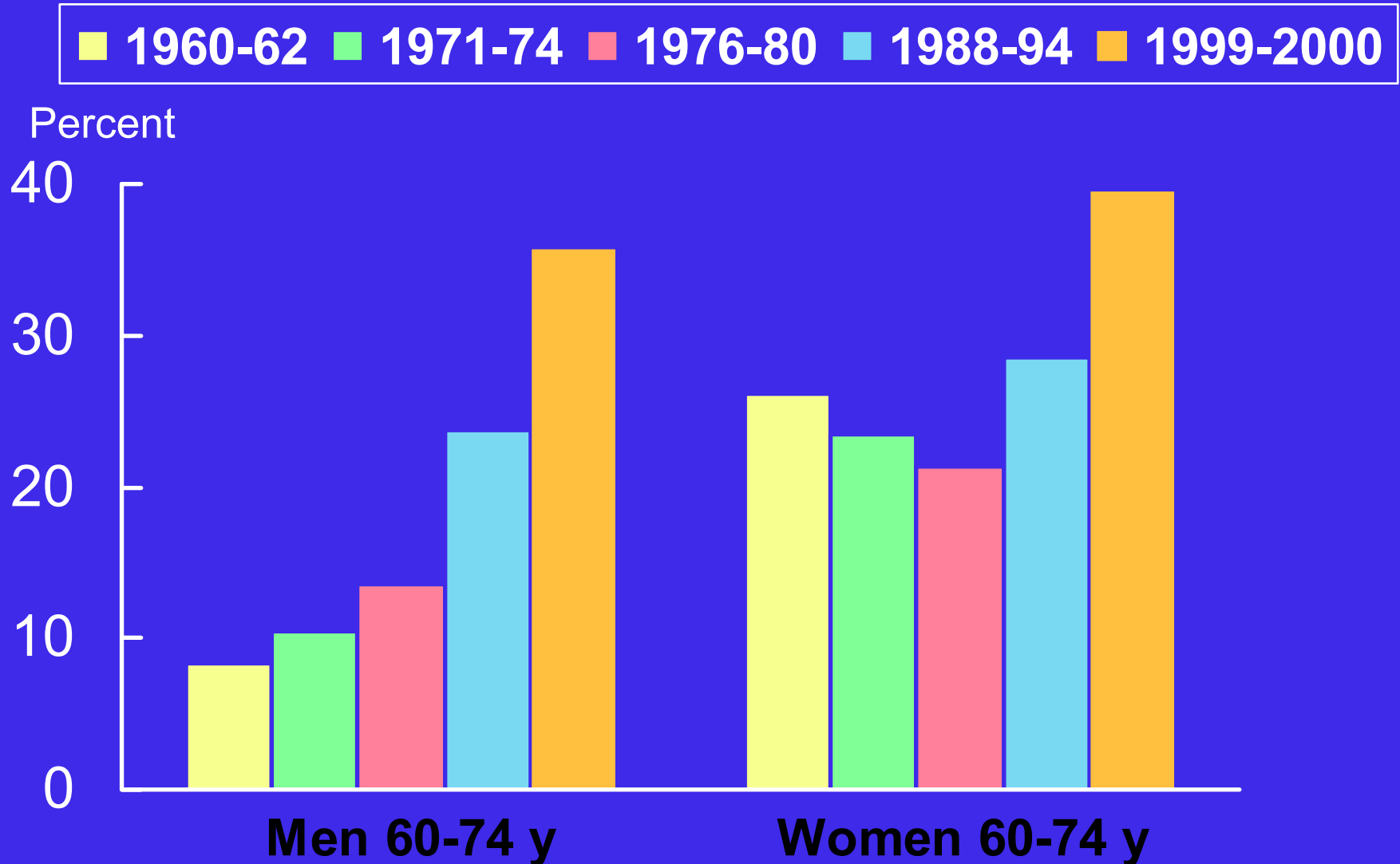
- Adults 20+ years
  - 31% obese
  - About 59 million people
  - 64% overweight or obese
  - About 123 million people
- Children, 6-19 years
  - 15% overweight
  - About 9 million children

# Age-adjusted Trends in Obesity\*



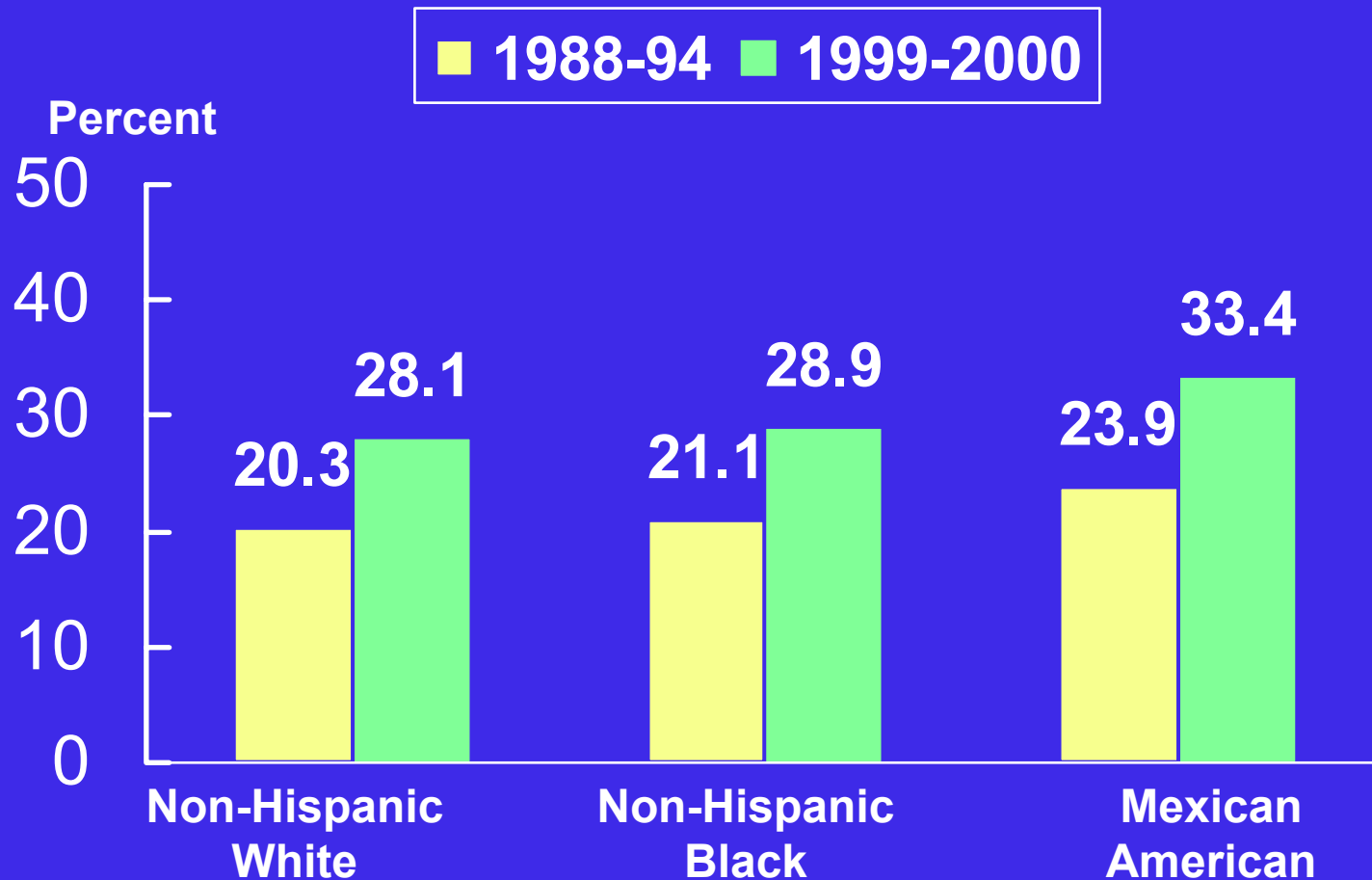
\*BMI $\geq$ 30; SOURCE: NHES I, NHANES I, NHANES II, NHANES III, NHANES 1999-2000

# Age-adjusted Trends in Obesity\*



\*BMI $\geq$ 30; SOURCE: NHES I, NHANES I, NHANES II, NHANES III, NHANES 1999-2000

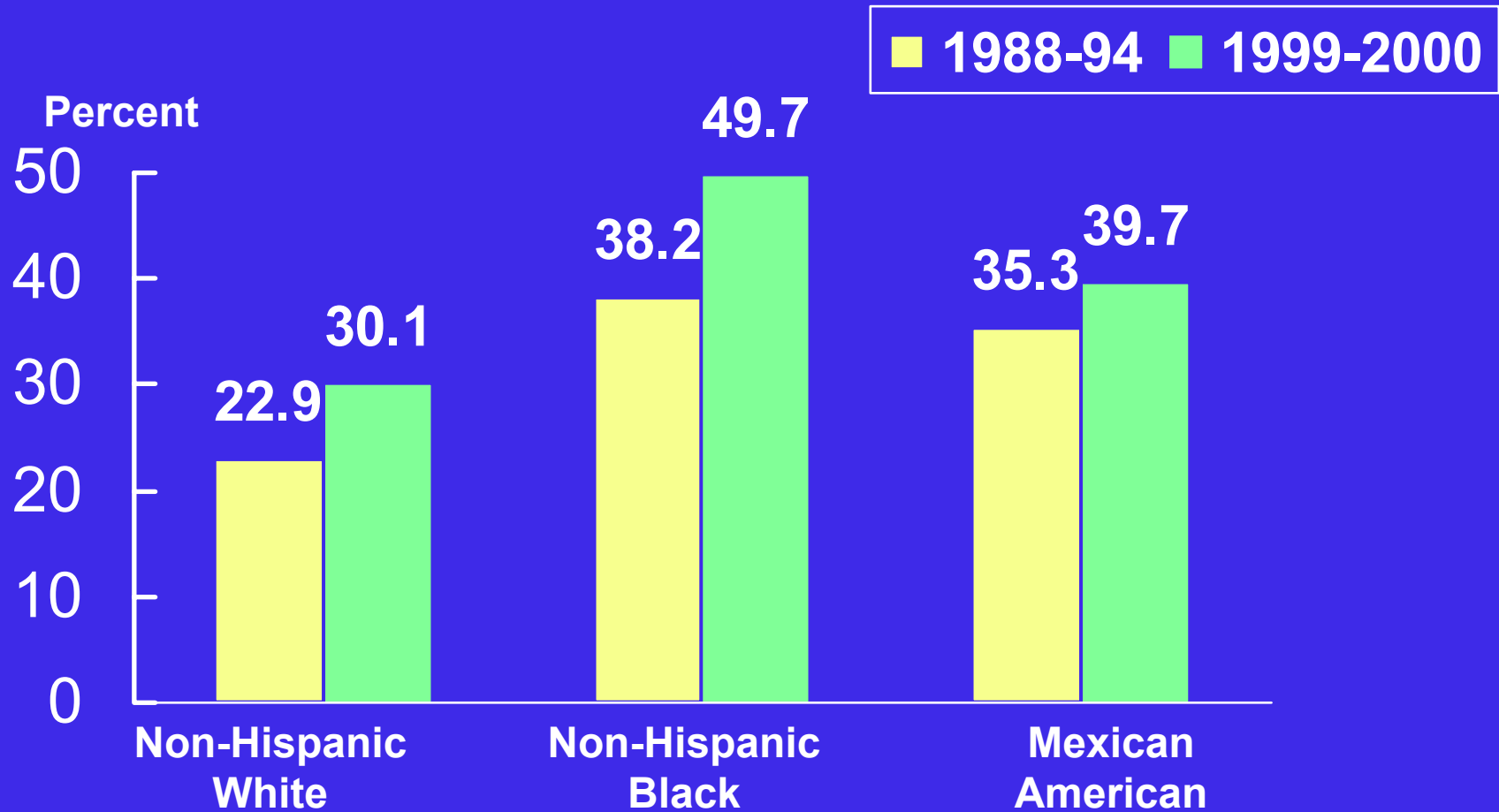
# Obesity\*, adult men 20+ years



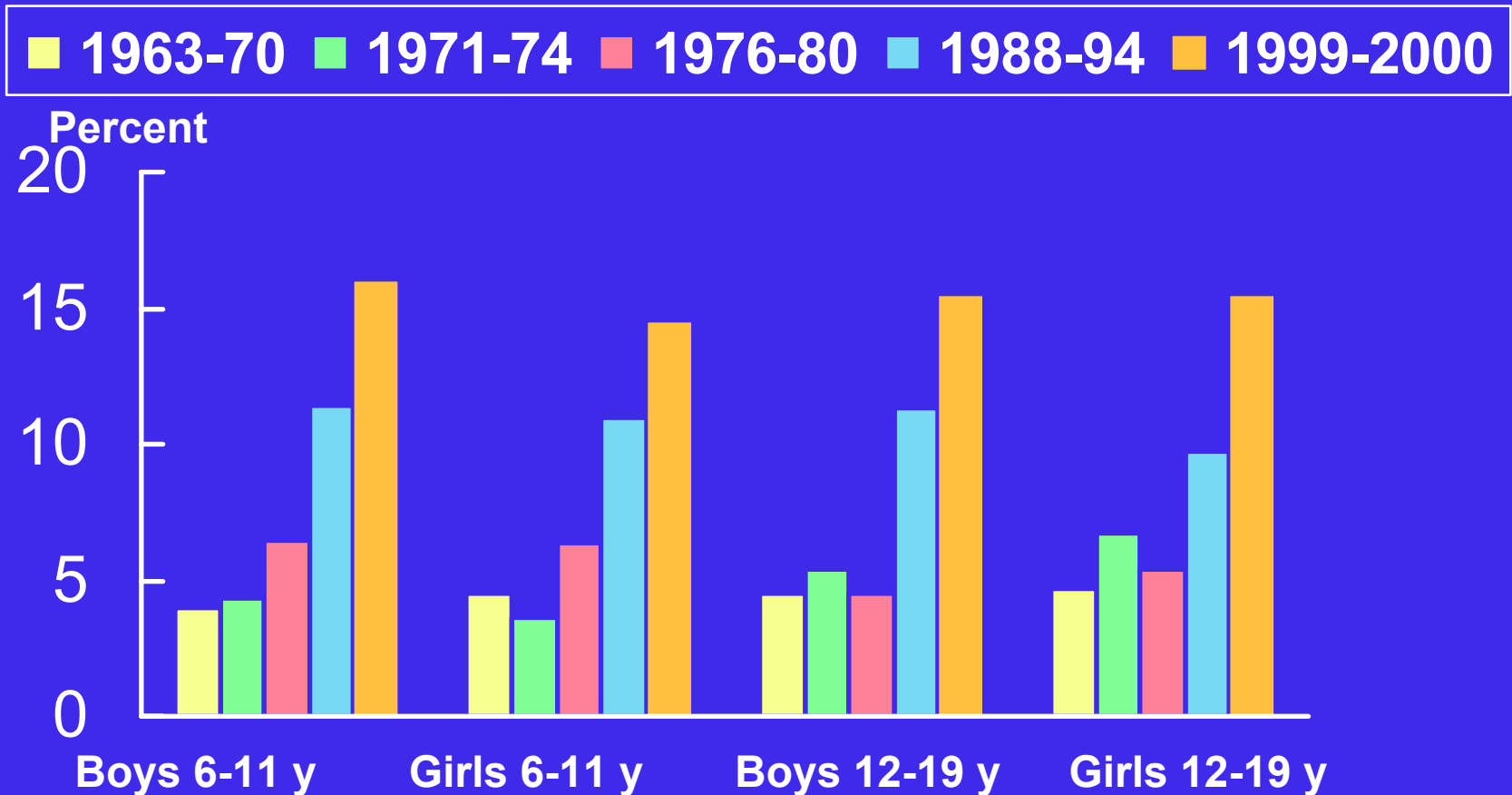
\*BMI ≥ 30

SOURCE: NHANES III, NHANES 1999-2000

# Obesity, adult women 20+ years



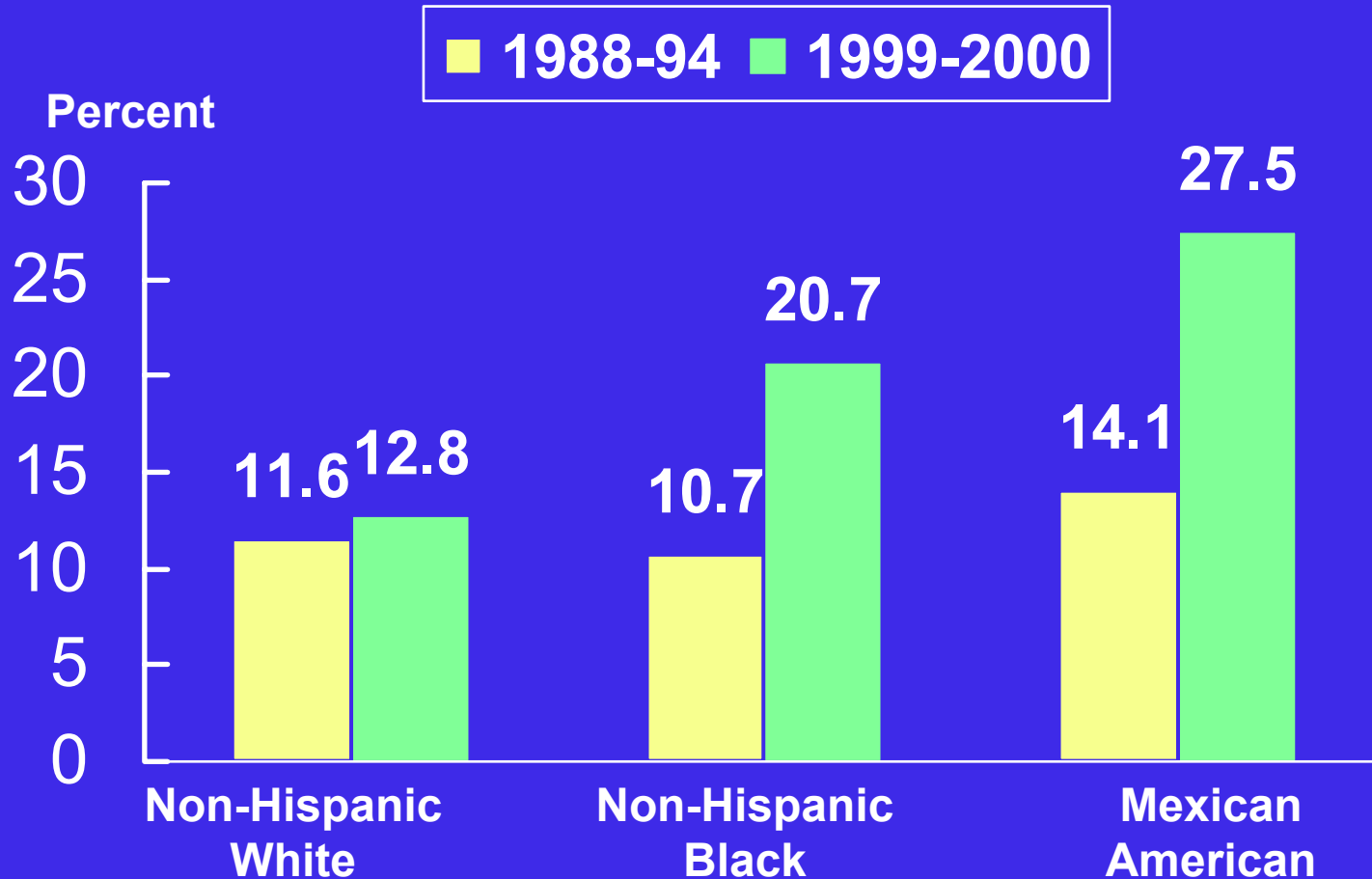
# Trends in Overweight\* for Children



\*BMI ≥ 95<sup>th</sup> percentile of BMI-for-age, 2000 CDC growth charts

SOURCE: CDC/NCHS; NHES II, NHES III, NHANES I, NHANES II, NHANES III, NHANES 1999-2000

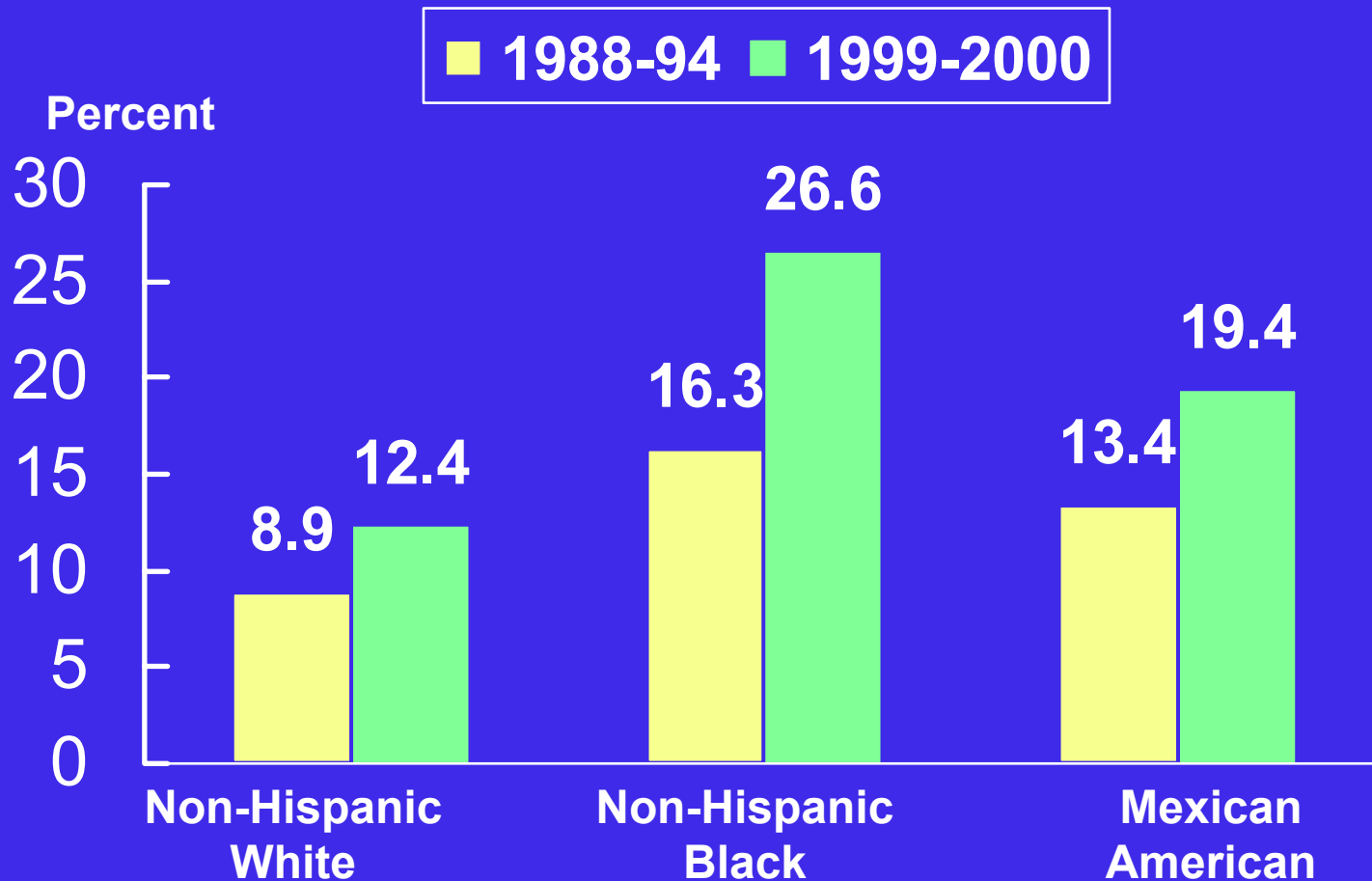
# Overweight,\* boys 12-19 years



\*BMI  $\geq$  95<sup>th</sup> percentile of BMI-for-age, 2000 CDC growth charts

SOURCE: NHANES III, NHANES 1999-2000

# Overweight,\* girls 12-19 years



\*BMI $\geq$ 95<sup>th</sup> percentile of BMI-for-age, 2000 CDC growth charts  
SOURCE: NHANES III, NHANES 1999-2000

# Why the increase?

- Calories and physical activity
  - Some data suggest calories consumption not up
  - 25-40% inactive during leisure time
- Complex issue
  - Lifestyles, environment & genes
- Underlying factors
  - Larger food portions; eating out; computers; crime
  - Data lacking

# Summary

- Overweight and obesity increasing among all groups, but biggest increases between NHANES II and NHANES 1999-2000:
  - 60-69 years: 13%
  - Black women: 11%
  - Black teens: 10%
  - Mexican American teen males 13%

# Summary

- Differences by race/ethnicity
  - Adult women, not men
  - Teens
- Differences by income among children
  - White teens only